

PSYCHOLOGY
A STUDY OF MENTAL LIFE

ROBERT S. WOODWORTH

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BY

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PREFACE

A few words to the reader are in order. In the first place, something like an apology is due for the free way in which the author has drawn upon the original work of many fellow-psychologists, without any mention of their names. This is practically unavoidable in a book intended for the beginner, but the reader may well be informed of the fact, and cautioned not to credit the content of the book to the writer of it. The author's task has been that of selecting from the large mass of psychological information now available, much of it new, whatever seemed most suitable for introducing the subject to the reader. The book aims to represent the present state of a very active science.

Should the book appear unduly long in prospect, the longest and most detailed chapter, that on Sensation, might perfectly well be omitted, on the first reading, without appreciably disturbing the continuity of the rest.

On the other hand should any reader desire to make this text the basis of a more extensive course of reading, the lists of references appended to the several chapters will prove of service. The books and articles there cited will be found interesting and not too technical in style.

Much advantage can be derived from the use of the "Exercises". The text, at the best, but provides raw material. Each student's finished product must be of his own making. The exercises afford opportunity for the student to work over the material and make it his own.

A first or preliminary edition of this book, in mimeographed sheets, was in use for two years in introductory classes con-

ducted by the author and his colleagues, and was subjected to exceedingly helpful criticism from both teachers and students. The revision of that earlier edition into the present form has been very much of a coöperative enterprise, and so many have coöperated that room could scarcely be found for all their names. Professor A. T. Poffenberger, Dr. Clara F. Chassell, Dr. Georgina I. Gates, Mr. Gardner Murphy, Mr. Harold E. Jones and Mr. Paul S. Achilles have given me the advantage of their class-room experience with the mimeographed book. Dr. Christine Ladd-Franklin has very carefully gone over with me the passages dealing with color vision and with reasoning. Miss Elizabeth T. Sullivan, Miss Anna B. Copeland, Miss Helen Harper and Dr. A. H. Martin have been of great assistance in the final stages of the work. Important suggestions have come also from several other universities, where the mimeographed book was inspected.

R. S. W.

COLUMBIA UNIVERSITY

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PSYCHOLOGY

CHAPTER I

WHAT PSYCHOLOGY IS AND DOES

THE SUBJECT-MATTER OF THE SCIENCE, ITS PROBLEMS AND ITS METHODS

Modern psychology is an attempt to bring the methods of scientific investigation, which have proved immensely fruitful in other fields, to bear upon mental life and its problems. The human individual, the main object of study, is so complex an object, that for a long time it seemed doubtful whether there ever could be real science here; but a beginning was made in the nineteenth century, following the lead of biology and physiology, and the work of the investigator has been so successful that to-day there is quite a respectable body of knowledge to assemble under the title of scientific psychology.

Psychology, then, is a science. It is the science of—what shall we say? “The science of the soul”—that is what the name means by derivation and ancient usage. “The science of the mind” has a more modern sound. “The science of consciousness” is more modern still. “The science of behavior” is the most recent attempt at a concise formula.

None of these formulas is wholly satisfactory. Psychology does not like to call itself the science of the soul, for that has a theological tang and suggests problems that have so far not seemed accessible to scientific investigation. Psychology does not like very well to call itself the science

of the mind, as *the* mind seems to imply some thing or machine, and there is no such thing to be observed (unless it be the brain and body generally), and, anyway,¹ psychology is distinctly a study of actions rather than of things. Psychology does not like to limit itself to the study of consciousness, but finds it necessary to study also unconscious actions. As to "behavior", it would be a very suitable term, if only it had not become so closely identified with the "behavioristic movement" in psychology, which urges that consciousness should be entirely left out of psychology, or at least disregarded. "Behavior psychology", as the term would be understood to-day, means a part of the subject and not the whole.¹

The best way of getting a true picture of psychology, and of reaching an adequate definition of its subject-matter, would be to inspect the actual work of psychologists, so as to see what kind of knowledge they are seeking. Such a survey would reveal quite a variety of problems under process of investigation, some of them practical problems, others not directly practical.

VARIETIES OF PSYCHOLOGY

Differential psychology. One line of question that always interests the beginner in psychology is as to how people differ—how different people act under the same circumstances—and why; and if we watch the professional psychologist, we often find him working at just this problem. He tests a great number of individuals to see how they differ, and tries to discover, on what factors their differences depend, how far on heredity, how far on environment. The "psychologist" in such a place as the children's court

¹ A series of waggish critics has evolved the following: "First psychology lost its soul, then it lost its mind, then it lost consciousness; it still has behavior, of a kind."

is a specialist whose duty it is to test the delinquent children that are brought before the court, with the special object of measuring the intelligence of each individual child and of helping in other ways to understand the child's peculiar conduct and attitude.

The "psychological examiner" in the Army, during the Great War, had the same general object in view. It was desirable to measure the intelligence of each recruit as he entered the service, since military experience had shown that men of low intelligence made poor soldiers, while those of high intelligence made the best officers and non-commissioned officers, provided they also possessed good physique and certain less measureable mental qualifications, such as courage and leadership.

Applied psychology. The Army psychologists, like the court psychologist, were engaged in applying scientific knowledge to the practical problems of life; and there are many other applications of psychology, to education, to medicine, to business and other occupations, as well as to the art of right living. Scientific knowledge enables you to *predict* and *control*. Having devised scientific tests for intelligence, you can predict of a six-year-old boy who tests low, that he will not get much good from the regular classes in school; and thus you are in a position to control the education of this boy for his own best interests. In the Army, it happened during the earlier part of the war that some companies or regiments made much slower progress in training than others; and a whole Division was delayed for months because of the backwardness of a single regiment. When the psychological tests were introduced, these slow-learning units were found to contain a disproportionate number of men of low intelligence. From that time on, it was possible by aid of the tests to equalize the intelligence of different units when first formed, and thus insure equal

progress in training. This was a good example of "control".

Most of us are attracted by the practical use of a science, and some have no patience with any study that does not seem immediately practical. But really any science, however much it is applied, must remain fundamentally a "pure science"; that is, it must seek most of all to know and understand. Practical scientific knowledge was usually first obtained without any inkling of how it might be used. The science of electricity is the most striking example of this. It began as an attempt to understand certain curious phenomena, which seemed to be nothing but curiosities; yet when the knowledge of these phenomena had progressed to a certain point, abundant use was found for it. Much the same is true of psychology, which began as a pure science and only recently has found ways of applying its discoveries to practical affairs. So the student beginning the science, though properly desirous of making practical use of what he learns, should let himself be governed for the present by the desire to know and understand, confident that the more scientific (which is to say, the more complete, systematic and reliable) his knowledge is, the more available it will be for practical application.

General psychology. Our science is not concerned entirely with differences between people, but asks also in what ways people are alike, and this is indeed its central problem. How do "we" observe, learn, remember, imagine, think? What sensations and feelings do we have, what emotions, what instincts, what natural and acquired impulses to action? How are our natural powers and impulses developed and organized as we grow up? Psychology is concerned with the child as well as the adult, and it is even concerned with the animal. It is concerned with the abnormal as well as the normal human being. So you will find books and

courses on animal psychology, child psychology, abnormal psychology. Now general psychology—or just plain “psychology”—has to do with the main laws and principles that hold in all these special fields.

PSYCHOLOGY AS RELATED TO OTHER SCIENCES

A good definition of our science would distinguish it from other sciences, especially from those neighboring sciences with which it is in closest contact.

Psychology and sociology. There is no difficulty in framing a good logical distinction here. Sociology studies the activities of a group of people taken as a whole, while psychology studies the activities of the individuals. Both might be interested in the same social act, such as an election, but sociology would consider this event as a unit, whereas psychology would break it up into the acts of the several voters. The distinction is clear enough theoretically, but breaks down often in practice, as sociology would like to know the motives that swayed individual voters, while psychology on its side is interested to know what decision was reached by the majority. All the social sciences, including economics and politics, have a psychological side, since they evidently are concerned to know the causes that govern human conduct. Social psychology studies the individual in his social relations.

Psychology and biology. Biology, being the science of living creatures, includes psychology, which studies these creatures on the mental side. The science of life includes the science of mental life. We may call psychology a part of biology, or we may call it one of the biological sciences. It has very close contact with several other branches of biology. Animal psychology overlaps that part of zoology which studies the behavior of animals. Genetic psychology, as it is sometimes called, i.e., the study of mental heredity

and development, dovetails with the general biological science of genetics, so that we find biologists gathering data on the heredity of feeble-mindedness or of musical ability, while psychologists discuss the general theory of heredity.

Psychology and physiology. That one of all the sciences that has the closest contacts with psychology is human and animal physiology. Broadly defined, physiology is that part of biology that studies functions or activities; and, so defined, it includes psychology as part of itself. In practice, psychology devotes itself to desire, thought, memory, and such "mental functions", while physiology concentrates its effort upon "bodily functions" like digestion and circulation. But this is only a rough distinction, which breaks down at many points.

Where shall we class sensation? Is it "mental" or "bodily"? Both sciences study it. Physiology is perhaps more apt to go into the detailed study of the action of the sense organs, and psychology to concern itself with the classification of sensations and the use made of them for recognizing objects or for esthetic purposes. But the line between the two sciences is far from sharp at this point.

Speech, also, lies in both provinces. Physiology has studied the action of the vocal organs and the location of the brain centers concerned in speech, while psychology has studied the child's process of learning to speak and the relation of speech to thought, and is more apt to be interested in stuttering, slips of the tongue, and other speech disturbances which are said to be "mental rather than physical".

It would be hard to mention any activity that is mental without being physical at the same time. Even thinking, which seems as purely mental as any, requires brain action; and the brain is just as truly a bodily organ as the heart or stomach. Its activity is bodily activity and lies properly within the field of physiology.